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論文([http://www.researchgate.net/profile/Taichi\\_Takasuka](http://www.researchgate.net/profile/Taichi_Takasuka))

#### 査読付き論文

1. Book, A.J., Lewin, G.R., McDonald B.R., **Takasuka, T.E.**, Doering, D.T., Adams, A.S., Blodgett, J.A.V., Clardy, J., Raffa, K.F., Fox, B.G., and Currie, C.R. (2014) "Cellulolytic *Streptomyces* strains associated with herbivorous insects share a phylogenetically-linked capacity for the degradation of lignocellulose" *Appl. Environ. Microbiol.*, *in press*
2. Book A.J.\*, Yannamalli, R.M.\*, **Takasuka, T.E.\***, Currie, C.R., Phillips, G.N.Jr., and Fox, B.G. "Evolution of substrate specificity in bacterial AA10 lytic polysaccharide monoxygenases" *Biotechnol Biofuels.*, *in press*
3. Deng, K., **Takasuka, T.E.**, Heins, R., Cheng, X., Bergeman, L.F., Shi, J., Achenbrenner, R., Deutsch, S., Singh, S., Sale, K.L., Simmons, B.A., Adams, P.D., Singh, A.K., Fox, B.G., and Northen, T.R. (2014) "Rapid Kinetic Characterization of Glycosyl Hydrolases Based on Oxime Derivatization and Nanostructure-Initiator Mass Spectrometry (NIMS)" *ACS Chem. Biol.*, *in press*
4. **Takasuka, T.E.**, Acheson, J.F, Bianchetti, C.M., Prom, B.M., Bergeman, L.F, Book, A.J, Currie, C.R., and Fox, B.G. (2014) "Atomic resolution structure and biochemical properties of a proteolytically processed  $\beta$ -mannanase from cellulolytic *Streptomyces* sp. SirexAA-E" *PLoS One* 9, e94166
5. **Takasuka, T.E.**<sup>†</sup>, Hsieh, Y.J., and Stein, A. (2014) "Miniaturized sequencing gel analysis for DNA footprinting" *Appl. Biochem. Biotechnol.*, 172, 1-8
6. **Takasuka, T.E.\***, Bianchetti, C.M.\*, Tobimatsu, Y., Bergeman, L.F, Ralph, J., and Fox, B.G. (2013) "Structure and function of abundantly secreted chitosanase SACTE\_5457 from *Streptomyces* sp. SirexAA-E." *Proteins: Str. Func. And Bioinfo.*, DOI: 10.1002/prot.24491
7. Bianchetti, C.M., Harmann, C.H., **Takasuka, T.E.**, Hura, G.L., Dyer, K, and Fox, B.G. (2013) "Fusion of Dioxygenase and Carbohydrate-Binding Module in a Novel Secreted Caffeoyl-CoA Dioxygenase from Cellulolytic *Streptomyces* sp. SirexAA-E" *J. Biol. Chem.*, 288 18574-18587
8. Chandrasekaran, A. Deng, K., Koh, C.Y., **Takasuka, T.**, Bergeman, L.F., Fox, B.G., Adams, P, and Singh, A.K. (2013) "A universal flow cytometry assay for screening carbohydrate-active enzymes using glycan microspheres." *ChemComm.*, 49, 5441-5443
9. **Takasuka, T.E.\***, Book, A.J.\*, Lewin, G.R., Currie, C.R., and Fox, B.G. (2013) "Aerobic deconstruction of cellulosic biomass by an insect-associated *Streptomyces*." *Nat. Sci. Rep.*, 3, 1030
10. Riederer, A., **Takasuka, T.E.**, Makino, S., Stevenson, D.M., Bukhman, Y., Elsen, N.L., and Fox, B.G. (2011) "Global gene expression patterns in *Clostridium thermocellum* from microarray analysis of chemostat culture on cellulose or cellobiose." *Appl. Environ. Microbiol.*, 77, 1243-1253

11. Miller, A., Chen, J., **Takasuka, T.E.**, Kaufman, P.D., Jacobi, J.L., Irudayaraj, J.M.K., and Kirchmaier, A.L. (2010) “Proliferating cell nuclear antigen (PCNA) is required for cell- cycle regulated silent chromatin on replicated and nonreplicated genes.” *J Biol. Chem.*, 285, 35142-35154
12. **Takasuka, T.E.**, and Stein, A. (2010) “Direct measurements of the nucleosome-forming preferences of periodic DNA motifs challenge established models.” *Nucl. Acids. Res.*, 38, 5672-5680
13. Stein, A., **Takasuka, T.E.**, and Collings, C.K. (2010) “Are nucleosome positions in vivo primarily determined by histone-DNA sequence preferences?” *Nucl. Acids. Res.*, 38, 709-719
14. **Takasuka, T.E.**, Cioffi, A., and Stein, A. (2008) “Sequence information encoded in DNA that may influence long-range chromatin structure correlates with human chromosome functions.” *PLoS One*, 3 e2643

† Correspondence, \* Equally contributed,

## 著書

1. **Takasuka, T.E.**, Walker, J.A., Bergeman, L.F., Vander Meulen, K.A., Makino, S.I., Elsen, N.L., Fox, B.G. (2014) “Cell-free translation of biofuels enzymes.” *Methods. Mol. Biol.*, DOI: 10.1007/978-1-62703-782-2\_5

## 学会発表 (2010-present)

### 口頭発表

1. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2014)  
Title: Genome-enabled Biochemical and Structural Characterization of GH5 Enzymes
2. Invited talk at University of California, Santa Cruz, Santa Cruz, CA (2014)  
Title: Genome-enabled Discovery of Biomass-degrading Enzymes for Bioenergy Production  
Host: Prof. Harry F. Noller
3. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2013)  
Title: Biochemical and Structural Characterization of an Engineered Tri-functional GH5 Cellulase
4. University of Wisconsin – Madison, Biochemistry Seminar, Madison, WI (2013)  
Title: Atomic resolution structure and biochemical properties of a proteolytically processed beta-mannanase from cellulolytic *Streptomyces* sp. SirexAA-E
5. The American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA (2013)  
Title: Discovery and functional determinations of biomass-degrading enzymes by robotic cell-free translation.
6. DOE – Great Lakes Bioenergy Research Center annual meeting, Chicago, IL (2012)  
Title: Discovery and functional determination of biomass-degrading enzymes.
7. The American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN (2012)  
Title: Discovery and characterization of cellulolytic enzymes from the wood wasp symbiont *Streptomyces* sp. ActE.
8. Invited talk at Ehime University, CSTRC VBL seminar, Ehime, Japan (2011)  
Title: Coherent genomic and proteomic responses for naturally optimized biomass degrading system of the insect symbiont *Streptomyces* sp. ActE.

Host: Prof. Tatsuya Sawasaki

9. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2011)  
Title: Discovery and characterization of cellulolytic enzymes from the wood wasp symbiont *Streptomyces* sp. ActE.

#### ポスター発表

1. The 37<sup>th</sup> Annual Meeting of the Molecular Biology Society of Japan, Yokohama, Japan (2014)  
Title: Structure and functional characterization of laminarinase from *Streptomyces* sp. SirexAA-E
2. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2014)  
Title: Structural and functional determination of novel multifunctional enzymes by the high-throughput gene synthesis, protein translation and the state-of-art functional platform.
3. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2014)  
Title: Structural and functional study of substrate bound mode of bacterial GH55 enzyme.
4. 2014 Genomic Science Contractors – Grantees Meeting, Bethesda, MD (2014)  
Title: Contribution of multifunctional enzymes to biomass hydrolysis.
5. The 36<sup>th</sup> Annual Meeting of the Molecular Biology Society of Japan, Kobe, Japan (2013)  
Title: High throughput functional screening, Biochemical and Structural Characterization of Multifunctional Cellulase.
6. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2013)  
Title: Structural and functional analysis for the multi-functional cellulases
7. The Annual Midwest Enzyme Meeting, Chicago, IL (2012)  
Title: High-throughput protein production and the multi-enzyme assay platform for biomass-degrading enzymes.
8. 2012 Genomic Science Contractors – Grantees Meeting, Bethesda, MD (2012)  
Title: Systems – level discovery and characterization of cellulolytic enzymes from the wood wasp symbiont *Streptomyces*.
9. DOE – Great Lakes Bioenergy Research Center annual meeting, South Bend, IN (2010)  
Title: Combinatorial discovery of enzymes and proteins for biomass deconstruction.

#### 特許

- **Takasuka T.E.**, Bianchetti, C.M., and Fox, B.G. (2012) Multifunctional cellulase/hemicellulase. P120371US02.
- Fox, B.G., **Takasuka T.E.**, Book, A.J., and Currie, C.R. (2011) Methods and compositions for improved lignocellulosic materials hydrolysis. P110314US01

#### 教育

**Lecturer** Department of Biochemistry, University of Wisconsin – Madison 2013 – present  
*Biochem909: Biochemistry seminar (one semesters)*

**Teaching instructor** Department of Biological Sciences, Purdue University 2006 – 2009  
*BIOL221: Microbiology (three semesters of laboratory and lecture)*

*BIOL542: Chromatin lab (two semester of laboratory and lecture)*

*BIOL573: Molecular biology (two semesters of lecture)*

**Teaching assistant** Department of Biochemistry, Purdue University

2004 – 2005

*BCHM309: Introductory biochemistry (three semesters of laboratory and lecture)*

**RESEARCH STUDENT MENTORING**, University of Wisconsin – Madison

Ms. Hannah Udell\* (B.S., 2014)

2013 – present

Mr. Ben Prom\* (B.S., 2013)

2012 – 2013

Mr. Connor Harmann\* (B.S., 2014)

2011 – present

Ms. Meredith Hinkes (B.S., 2014)

2012

Mr. Johnnie A. Walker\*<sup>†</sup> (Ph.D. Dissertator in Biophysics Degree Program)

2010 – present

Mr. Justin F. Acheson\* (Ph.D. Dissertator in Department of Biochemistry)

2010 – present

Mr. Ryan Aschenbrener\* medical student, University of Cincinnati (B.S., 2013)

2010 – 2012

Ms. Erin Bulleit medical student, University of Rochester (B.S., 2010)

2010 – 2011

\* Students receiving coauthorship on publications, <sup>†</sup>Advised during thesis

**学会会員**

- American Chemical Society

2013 – present

- The American Society for Biochemistry and Molecular Biology

2008 – 2010

**アウトリーチ活動**

I have participated in K-16 (students from kindergarten up to college senior) educational outreach programs as part of the US Department of Energy – Great Lakes Bioenergy Research Center by giving a presentation about biofuels, and also mentored high school students during the summer. Additionally, I have participated in outreach activities to share my experience and love of science to retirees in the Madison community (Wisconsin, USA).